

**Amendments to the Claims:**

This listing of the claims will replace all prior versions, and listings, of claims in the application:

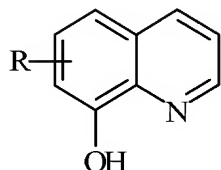
**Listing of Claims:**

1 (Previously Presented). A compound comprising a moiety having an iron chelator function, said iron chelating moiety being selected from the group consisting of an 8-hydroxyquinoline moiety, and, in addition, one or both of the following moieties: (i) a moiety that imparts a neuroprotective function to the compound, said neuroprotective moiety being selected from the group consisting of an L- or D-cysteine or an L- or D-alanine residue, a neuroprotective peptide, a neuroprotective peptide fragment, and an analog of said neuroprotective peptide or neuroprotective peptide fragment; and (ii) a moiety that imparts combined antiapoptotic and neuroprotective function to the compound, said antiapoptotic and neuroprotective moiety being a propargyl group.

2 (Previously Presented). A compound according to claim 1, wherein said antiapoptotic and neuroprotective moiety is a propargylamine group.

3 (Cancelled).

4 (Currently Amended). A compound according to claim 1, consisting of an 8-hydroxyquinoline of the formula:



wherein R represents the neuroprotective moiety or the neuroprotective and antiapoptotic moiety, and wherein R is linked at position 5, 6 or 7 of the quinoline ring, ~~at position 1, 2, 5 or 6 of the 3-hydroxy-4-pyridinone ring, wherein R' is C<sub>1</sub>-C<sub>4</sub> lower alkyl, or at position 4 or 5 of the 1-hydroxy-2-pyridinone ring.~~

5 (Previously Presented). A compound according to claim 4, consisting of said 8-hydroxyquinoline.

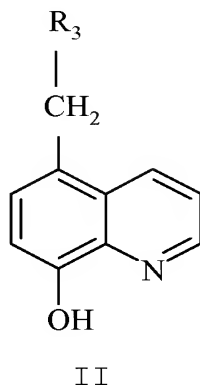
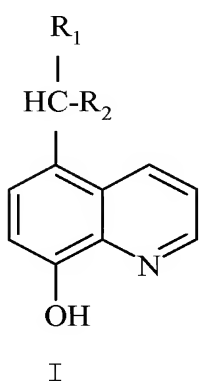
6-18 (Cancelled).

19 (Previously Presented). A compound according to claim 1, comprising a 8-hydroxy-5-quinolinyl iron-chelating moiety and a propargyl group.

20 (Previously Presented). A compound according to claim 19, wherein said iron chelating moiety is an 8-hydroxy-5-quinolinylmethylene radical that is linked to the propargyl group via -N- atom(s).

21-37 (Cancelled).

38 (Currently Amended). The compound according to claim 1 of the formula I to II, or a pharmaceutically acceptable salt thereof:

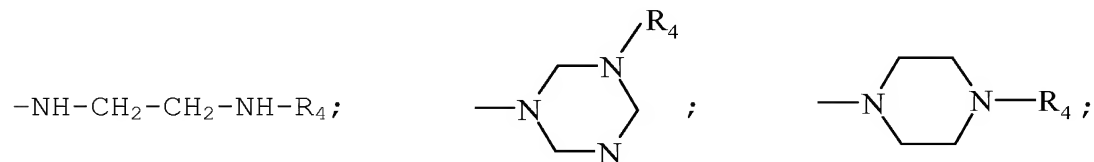


wherein:

R<sub>1</sub> is a residue of an analog of a neuroprotective peptide, or of a fragment thereof, containing a cysteine residue that is linked to the C atom via the -S- atom of the L- or D-Cys residue, and wherein the amino terminal of the peptide is unsubstituted or substituted by a hydrophobic group;

R<sub>2</sub> is H or -NH-X;

R<sub>3</sub> is a group selected from the group consisting of



-CR<sub>5</sub>R<sub>6</sub>R<sub>7</sub>; ~~-N(CH<sub>3</sub>)-X;~~ -N(R<sub>8</sub>)-CH(CH<sub>2</sub>SH)COOC<sub>2</sub>H<sub>5</sub>; -N(R<sub>8</sub>)-CH<sub>2</sub>-COOCH<sub>2</sub>C<sub>6</sub>H<sub>5</sub>; and -S-CH<sub>2</sub>-CH(COOH)-NHR'<sub>8</sub>;

$R_4$  is a group selected from the group consisting of  
X;  $(CH_2)_2-O-R_8$ ; and  $-COO-(CH_2)_2-NH-R_8$ ;

$R_5$  is H,  $C_1-C_4$  lower alkyl or  $COOC_2H_5$ ;

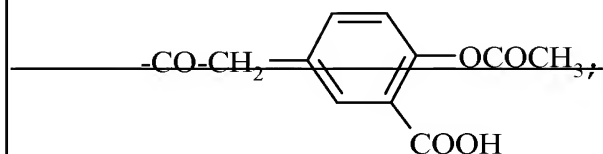
$R_6$  is H,  $COOH$ ,  $COO^-$  or  $COOC_2H_5$ ;

$R_7$  is selected from the group consisting of  $-NH-R'_8$ ;  
 $-NH-NH-R_8$ ; and  $-NH-NH-CO-CH(CH_2OH)-NH-R_8$ ;

$R_8$  is X;

$R'_8$  is H, X or Fmoc; and

~~$R_9$  is selected from the group consisting of H;  $CO-CH_2-R_1$ ;  $CH_2-COOC_2H_5$ ;  $CH(CH_2SH)-COOC_2H_5$ ;~~

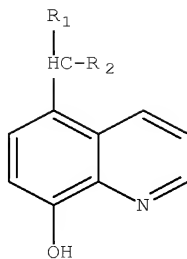


~~$R_{12}$  is X,  $C_1-C_4$  lower alkyl, preferably  $CH_3$ ,  $COOC_2H_5$  or  $(CH_2)_2-OH$ ; and~~

X is a propargyl group,

provided that when  $R_3$  is  $-CR_5R_6R_7$ ,  $R_6$  is  $COOC_2H_5$  and  $R_7$  is  $-NH-R'_8$ , then  $R'_8$  is X.

39 (Previously Presented). The compound or a pharmaceutically acceptable salt thereof according to claim 38, of the formula I:



I

wherein

R<sub>1</sub> is a residue of an analog of a neuroprotective peptide or of a fragment thereof containing an L- or D-cysteine residue that is linked to the C atom via the -S- atom of the Cys residue, and wherein the amino terminal of the peptide is unsubstituted or substituted by a hydrophobic group;

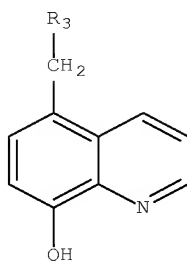
R<sub>2</sub> is H or -NH-X; and

X is a propargyl group.

40 (Previously Presented). The compound of the formula I according to claim 39, wherein R<sub>1</sub> is an analog of a neuroprotective peptide, or of a fragment thereof, in which one amino acid residue has been replaced by an L- or D-cysteine residue, wherein said neuroprotective peptide is selected from the group consisting of vasoactive intestinal peptide (VIP), gonadotropin-releasing hormone (GnRH), Substance P and enkephalin; and R<sub>2</sub> is H.

41-43 (Cancelled)

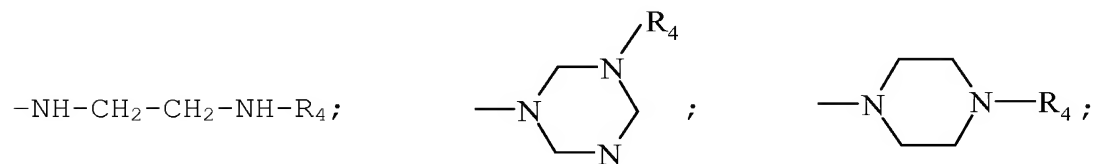
44 (Currently Amended). The compound according to claim 38, or a pharmaceutically acceptable salt thereof, of the formula II:



II

wherein

R<sub>3</sub> is a group selected from the group consisting of



-CR<sub>5</sub>R<sub>6</sub>R<sub>7</sub>; ~~N(CH<sub>2</sub>)<sub>2</sub>X~~; -N(R<sub>8</sub>)-CH(CH<sub>2</sub>SH)COOC<sub>2</sub>H<sub>5</sub>; -N(R<sub>8</sub>)-CH<sub>2</sub>-COOCH<sub>2</sub>C<sub>6</sub>H<sub>5</sub>; and -S-CH<sub>2</sub>-CH(COOH)-NHR'<sub>8</sub>;

R<sub>4</sub> is a group selected from the group consisting of X; (CH<sub>2</sub>)<sub>2</sub>-O-R<sub>8</sub>; and -COO-(CH<sub>2</sub>)<sub>2</sub>-NH-R<sub>8</sub>;

R<sub>5</sub> is H, CH<sub>3</sub> or COOC<sub>2</sub>H<sub>5</sub>;

R<sub>6</sub> is H, COOH, COO<sup>-</sup> or COOC<sub>2</sub>H<sub>5</sub>;

R<sub>7</sub> is selected from the group consisting of -NH-R'<sub>8</sub>; -NH-NH-R<sub>8</sub>; and -NH-NH-CO-CH(CH<sub>2</sub>OH)-NH-R<sub>8</sub>;

R<sub>8</sub> is X;

R'<sub>8</sub> is H, X or Fmoc; and

X is a propargyl group,

provided that when  $R_3$  is  $-CR_5R_6R_7$ ,  $R_6$  is  $COOC_2H_5$  and  $R_7$  is  $-NH-R'_8$ , then  $R'_8$  is X.

45 (Previously Presented). A compound of formula II according to claim 44, wherein  $R_3$  is a piperazine ring.

46-108 (Cancelled).

109 (Previously Presented). A pharmaceutical composition comprising a compound according to claim 38, or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable carrier.

110-140 (Cancelled).

141 (New). A compound according to claim 1, wherein said neuroprotective moiety is selected from the group consisting of a neuroprotective peptide, a neuroprotective peptide fragment, an analog of said neuroprotective peptide, and an analog of said neuroprotective peptide fragment.

142 (New). A compound according to claim 141, wherein said neuroprotective peptide is vasoactive intestinal peptide (VIP), gonadotropin-releasing hormone (GnRH), Substance P or enkephalin.

143 (New). A compound according to claim 141, wherein said neuroprotective peptide analog is an analog of vasoactive intestinal peptide (VIP), gonadotropin-releasing hormone (GnRH), Substance P or enkephalin or of a fragment

thereof, in which one amino acid residue is replaced by an L- or D-cysteine residue.

144 (New). A compound according to claim 143, wherein said analog is selected from the group consisting of an analog of the VIP fragment of SEQ ID NO:2 that may bear a stearyl or a Fmoc group at the amino terminal, the GnRH analogs of SEQ ID NO:4 and SEQ ID NO:5, the Substance P analogs of SEQ ID NO:7 and SEQ ID NO:8, and the enkephalin analogs of SEQ ID NO:11, SEQ ID NO:12, SEQ ID NO:13, and SEQ ID NO:14.

145 (New). A compound according to claim 1, wherein the moiety imparting a neuroprotective function to the compound is an L- or D-cysteine or L- or D-alanine residue.

146 (New). A compound according to claim 1, comprising an 8-hydroxy-5-quinolinyl iron-chelating moiety and a residue of a neuroprotective peptide, a neuroprotective peptide fragment, an analog of said neuroprotective peptide, and an analog of said neuroprotective peptide fragment as the neuroprotective moiety.

147 (New). A compound according to claim 146, wherein said neuroprotective moiety is vasoactive intestinal peptide (VIP), gonadotropin-releasing hormone (GnRH), Substance P or enkephalin.

148 (New). A compound according to claim 146, wherein said neuroprotective moiety is an analog of vasoactive intestinal peptide (VIP), gonadotropin-releasing hormone (GnRH), Substance P or enkephalin, or of a fragment thereof in which one amino acid residue is replaced by an L- or D-cysteine residue.

149 (New). A compound according to claim 148, wherein said analog is selected from the group consisting of an analog of the VIP fragment of SEQ ID NO:2 that may bear a stearyl or a Fmoc group at the amino terminal, the GnRH analogs of SEQ ID NO:4 and SEQ ID NO:5, the Substance P analogs of SEQ ID NO:7 and SEQ ID NO:8, and the enkephalin analogs of SEQ ID NO:11, SEQ ID NO:12, SEQ ID NO:13, and SEQ ID NO:14.

150 (New). A compound according to claim 146, further comprising a propargyl group.

151 (New). A compound according to claim 1, comprising a 8-hydroxy-5-quinolinyl iron-chelating moiety and a residue of L- or D-cysteine or L- or D-alanine.

152 (New). A compound according to claim 151, further comprising a propargyl group.

153 (New). A compound according to claim 20, wherein said 8-hydroxy-5-quinolinylmethylene radical is linked to the propargyl group via a linker selected from the group

consisting of ethylenediamine, piperazine and 1,3,5-perhydrotriazine.

154 (New). A compound according to claim 155, wherein said 8-hydroxy-5-quinolinylmethylene radical is linked to the propargyl group via a piperazine moiety.

155 (New). A compound according to claim 20, wherein said 8-hydroxy-5-quinolinylmethylene radical is linked to the propargyl group via the -NH- group of an L- or D-alanine or L- or D-cysteine residue or an ester thereof.

156 (New). A compound according to claim 40, wherein said analog is selected from the group consisting of an analog of the VIP fragment analog of SEQ ID NO:2 bearing a stearyl (identified herein as compound M6, Appendix II) or a Fmoc group (M7, Appendix II) at the amino terminal, the residue of a GnRH analog of SEQ ID NO:4 (M8, Appendix II) or SEQ ID NO:5 (M22, Appendix II), the residue of a Substance P analog of SEQ ID NO:7 (M27, Appendix II) or SEQ ID NO:8 (M28, Appendix II), and the residue of an enkephalin analog of SEQ ID NO:11 (M19, Appendix II), SEQ ID NO:12 (M21, Appendix II), SEQ ID NO:13 (M18, Appendix II), and SEQ ID NO:14 (M20, Appendix II).

157 (New). A compound of the formula I according to claim 39, wherein R1 is an analog of a neuroprotective peptide, or of a fragment thereof, in which one amino acid

residue has been replaced by an L- or D-cysteine residue, said neuroprotective peptide being selected from the group consisting of vasoactive intestinal peptide (VIP), gonadotropin-releasing hormone (GnRH), Substance P or enkephalin; or a fragment thereof in which one amino acid residue has been replaced by a L- or D-cysteine residue and R2 is -NH-propargyl.

158 (New). A compound according to claim 157, wherein said analog is selected from the group consisting of the residue of an analog of the VIP fragment analog of SEQ ID NO:2 bearing a stearyl (M6A, Appendix I) or a Fmoc group (M7A, Appendix I) at the amino terminal, the residue of a GnRH analog of SEQ ID NO:4 (M8A) or SEQ ID NO:5 (M22A, Appendix I), the residue of a Substance P analog of SEQ ID NO:7 (M27A, Appendix I) or SEQ ID NO:8 (M28A, Appendix I), and the residue of an enkephalin analog of SEQ ID NO:11 (M19A, Appendix I), SEQ ID NO:12 (M21A, Appendix I), SEQ ID NO:13 (M18A, Appendix I), and SEQ ID NO:14 (M20A, Appendix I).

159 (New). A compound of formula II according to claim 44, wherein R3 is a piperazine ring and R4 is a propargyl group, as represented by the compound herein designated HLA20 (Appendix III).

160 (New). A compound of formula II according to claim 44, wherein R3 is a piperazine ring as represented by the compounds herein designated HLA16a and M17 (Appendix III).

161 (New). A compound of formula II according to claim 44, wherein R3 is -S-CH<sub>2</sub>-CH(COOH)-NHR<sub>8</sub>' NHR'<sub>8</sub> and R<sub>8</sub>' R'<sub>8</sub> is H, as represented by the compounds herein designated D-HQ-CysOH (M11, Appendix II) and L-HQ-CysOH (M12, Appendix II), or R<sub>8</sub>' R'<sub>8</sub> is propargyl, as represented by the compounds herein designated D-(HQ-Pr)-CysOH (M11a, Appendix III) and L-(HQ-Pr)-CysOH (M12a, Appendix III), or R<sub>8</sub>' R'<sub>8</sub> is Fmoc, as represented by the compounds herein designated M11B and M12B (Appendix IV).

162 (New). A compound of formula II according to claim 44, wherein R3 is a group -CR<sub>5</sub>R<sub>6</sub>R<sub>7</sub>, wherein R<sub>5</sub> is H, R<sub>6</sub> is COOH, R<sub>7</sub> is -NH-R<sub>8</sub>, -NH-R'<sub>8</sub> and R<sub>8</sub> R'<sub>8</sub> is H, as represented by the compounds herein designated D-HQ-Ala (M9, Appendix IV) and L-HQ-Ala (M10, Appendix IV); or R<sub>8</sub> R'<sub>8</sub> is propargyl, as represented by the compounds herein designated D-(HQ-Pr)-Ala (M9a, Appendix III) and L-(HQ-Pr)-Ala (M10a, Appendix III); or R<sub>5</sub> is H, R<sub>6</sub> is COOC<sub>2</sub>H<sub>5</sub> and R<sub>7</sub> is -NH-propargyl, as represented by the compound herein designated M31 (Appendix III).

163 (New). A compound of formula II according to claim 44, wherein R3 is a group -NR<sub>8</sub>-CH(CH<sub>2</sub>SH)COOC<sub>2</sub>H<sub>5</sub>, wherein

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Amdt. dated January 18, 2011

R8 is propargyl, as represented by the compound herein  
designated M33 (Appendix III).